

REMARKS

Claims 12-22 were rejected under 35 U.S.C. 103(a) as being unpatentable over EP944801A1 (also referenced herein as Wittchow et al US 6,189,491).

Claims 1-11, 16, and 18 are cancelled after amendment herein.

Claims 12-15, 17, and 19-22 remain active in the application.

Claims 12, 17, and 19 have been amended.

Claim 12 is the sole independent claim and is directed to a steam generator as recited.

Claims use “such that” phrase that Examiner dismisses as only functional

The Examiner asserts that in claim 12 of the instant application the phrase “... such that a steam-generator tube of said steam-generator tubes has a higher flow rate of the flow medium compared with said further steam-generator tube” does not define any structure and accordingly can not serve to distinguish.

The applicants note that the Examiner has missed the fact that the claim states “...configured such that...” and the word “configured” does require a structure. The claims must be interpreted in accordance with the specification; therefore, the claim includes the structure described in the specification that generates the stated function. Accordingly, the Examiner is obliged to find the claimed structure in the prior art.

Orientation direction of the discharge collector substantially effects operation of the device

The Examiner asserts the orientation direction of the discharge collector “does not seem to effect the operation of the device in any substantial way.” Applicant disagrees because within the field of heat transfer applicable to steam generators, the interaction of fluid flow and various surface area relationships is often critical to the effective operation of the invention. As explained below, the orientation of the discharge collector of the instant invention affects the swirling, intermixing, and homogeneity of the flow medium and represents an improvement over Wittchow et al.

Discharge collectors of Wittchow et al are connected perpendicular to the flow medium

The prior art does not teach or suggest the parallel arrangement of the elements of the instant invention. As clearly shown in Figures 1-3, Wittchow et al. teaches a steam generator having a vertical arrangement of steam generator tubes (13, 14) connected to discharge collectors (15, 16, 30, and 32) via a downpipe system (17). The downpipe system (17) is connected perpendicular across the through-flow of the flow medium (W), see column 6, lines 38-38. The steam generator tube groups (13, 14) are fed simultaneously into a common point in the discharge collectors (15, 16, 30, and 32) and the discharge collectors are plumbed together via the network of downpipe elements (17) which extend perpendicular to the flow medium (W).

In contrast, amended claim 12 presents a steam generator including, in relevant part, "... steam-generator tubes that are connected in parallel ..." and a discharge collector positioned "on the flow-medium side and is oriented with its longitudinal axis essentially parallel to the heating-gas direction." The parallel orientated groups of steam generator tubes allow the flow medium to merge into the appropriate parallel oriented discharge collector (20) in a sequential fashion which enhances the fluid and heat flow properties. As shown in Figure 3 of the instant invention, flow medium (W) flowing out of the steam-generator tubes (12) and flowing into the discharge collector (20) can overflow directly into the entry collector (24) at unique locations. The flow medium (W) strikes against structure of the discharge collector (such as base plate 42) and swirls and intermixes with the flow medium from other steam generator tubes (12) before passing from the discharge opening (48) of the discharge collector (20) into the downtake sections (46) of the steam generator tubes (22), also see Specification paragraph 0050 and 0051.

Since the steam-generator tubes (12, 22) are connected together in parallel and also connected to a parallel oriented discharge collector (20), the fluid flow into the entry collector (24) can swirl and intermix and form a more homogenous fluid flow than is achievable applying Wittchow et al. Additionally, much of the costly distributor and connection lines as well as the distribution elements of Wittchow et al. which extend between the discharge collector and entry collector can be dispensed with because the layout of the steam generator components of the instant invention is comparatively simple and does not require the additional components. The prior art does not teach or suggest the arrangement of the elements of the instant invention.

Further, claim 12 has been amended to include limitations from canceled claims 16 and 18. Claim 12 has also been amended to include the new limitation that the uptake and downtake

sections are connected by an overflow section. Support for these amendments is found in the Specification at paragraph 0037-0040. Configured this way, the pressure contribution of the flow medium (W) in the downtake section (32) helps to assist rather than hamper the fluid flow through the generator tube (22) leading to a low loss of generator tube pressure.

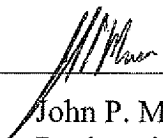
The prior art does not teach or suggest, inter alia, a steam generator with parallel steam generator tubes and parallel discharge collectors, along with steam generator tubes having an uptake section, downtake section, and interconnecting over flow section in a cooperative combination as recited in the instant invention

Conclusion

Applicants respectfully request allowance of the present application in view of the foregoing amendments and arguments. The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, including the fees specified in 37 C.F.R. §§ 1.16 (c), 1.17(a)(1) and 1.20(d), or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

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